.Metody teorii funktsiy kompleksnogo peremennogo   AID 627 - I

tion to physical and technical problems. The reader is expected to
be versed in the fundamental course of mathematical analysis, e.g.,
the first two volumes of V. I. Smirnov's Kurs vysshey matematiki
(1949), and G. M. Fikhtengol'ts' Kurs differentsial'nogo i
integral'nogo ischisleniya (vol. I-III, 1947-1949). The book is
divided into seven chapters. Chapter I covers all the fundamental
properties of functions of a complex variable, with their integra-
tion and representation in series (Laurent, Taylor) Riemaum surfaces;
chapter II, conformal representation; chapter III, boundary problems
and their application: harmonic functions, Dirichlet problem, prob-
lems of the theory of elasticity, Cauchy integral, formula of Keldysh-
Sedov (1937) for the solution of the composite boundary problem;
chapter IV, variational principles of conformal representation;
chapter V, application of the theory of functions to analysis;
chapter VI, operational method and its application: Laplace trans-
formation; and chapter VII, special functions: gamma function of
Euler, orthogonal polynomials, cylindrical and elliptic functions.
Every chapter includes numerous examples and a list of references.
An alphabetical general index is at the end of the book. The text
is illustrated by 218 figures and graphs.
No. of References: A large number in lists at the end of every
chapter, all Russian, many translated.
Facilities: None   2/2

LAVRENT'YEV, M.A.

*Lavrent'ev, M. A. **The Dirichlet problem for a narrow stratum.** Trudy Mat. Inst. Steklov., v. 38, pp. 146–151. Izdat. Akad. Nauk SSSR, Moscow, 1951. (Russian) 20 rubles.

Let D be a domain in 3-space homeomorphic to the region bounded by two concentric spheres. Let D be bounded by two continuously curved surfaces Γ and Γ_0, on which two functions, f and f_0, of class C^2 are defined, and let W be the harmonic function in D determined by the boundary conditions: $W=f$ on Γ, $W=f_0$ on Γ_0. It is assumed that through every point of Γ and Γ_0 there pass two spheres of radius r, one contained in D and the other in the complement of D, that every point A of Γ can be joined to a point A_0 of Γ_0 by a segment of the normal to Γ whose length n satisfies the inequality $0<\delta_0\leq n\leq\delta$, and that a similar condition is satisfied at every point of Γ_0. Let W_n denote the normal derivative of W at a point A of Γ.

The author states an estimate for $|W_n|$ depending on r, δ_0, δ and a bound on the boundary functions f, f_0 and their derivatives up to the second order (in an appropriate coordinate system) and an estimate of the change of W_n resulting from a slight change in Γ and f in the neighborhood of a point $A'\neq A$. Assuming that f, f_0 are of class C''', and that Γ is close to Γ_0 and f to f_0, "of order 2", the author derives an approximate formula for W_n depending on the values $f(A)$, $f_0(A_0)$, on the distance $\overline{AA_0}$, on the second derivatives of f at A, and on the mean curvature of Γ at A. The error term in this formula is $O(\hbar)$, $\hbar$ being a parameter characterizing the narrowness of the region D.

The presentation is very condensed, and the reviewer was unable to follow the details.

L. Bers.

ILIEV, Lyubomir; LAVRENT'YEV, M.A., akademik.

ILIYEV, Lyubomir.

Series with Faber's polynomials the coefficients of which take a finite number of values. Dokl.AN SSSR 90 no.4:499-502 Je '53.   (MLRA 6:5)

1. Akademiya Nauk SSSR. 2. Matematicheskiy institut pri Sofiyskom univer-sitete. Sofiya, Bolgariya (for Iliev).   (Series)   (Plynomials)

SUYETIN, P.K.; LAVRENT'YEV, M.A., akademik.

Abelian and Tauberian theorems for series of Faber's polynomials. Dokl.
AN SSSR 91. no.1:27-30 Jl '53.   (MLRA 6:6)

1. Akademiya nauk SSSR (for Lavrent'yev).   (Series) (Polynomials)

BELINSKIY, P.P.; Lavrent'yev, M.A., akademik.

Behavior of a quasiconformal mapping at an isolated point. Dokl.AN SSSR
91 no.4:709-710 Ag '53.   (MLRA 6:8)

1. Akademiya nauk SSSR (for Lavrent'yev).
        (Surfaces, Representation of)

VERIGIN, N.N.; LAVRENT'YEV, M.A., akademik.

Interaction of wells in transperipheral flooding of petroleum deposits. Dokl.AN SSSR 91 no.4:753-756 Ag '53.   (MIRA 6:8)

1. Akademiya nauk SSSR (for Lavrent'yev).
(Petroleum--Engineering) (Engineering--Petroleum)

BELINSKIY, P.P.; LAVRENT'YEV, M.A., akademik.

Deformation in quasi-conformal mappings. Dokl.AN SSSR 91 no.5:997-998 Ag '53.
(MLRA 6:8)

1. Akademiya nauk SSSR (for Lavrent'yev).   (Surfaces, Representation of)

KUDRYAVTSEV, L.D.; LAVRENT'YEV, M.A., akademik.

Harmonic representations. Dokl.AN SSSR 92 no.3:469-471 S '53.

(MLRA 6:9)

1. Akademiya nauk SSSR (for Lavrent'yev). 2. Moskovskiy fiziko-tekhniche-
skiy institut (for Kudryavtsev).   (Surfaces, Representation of)
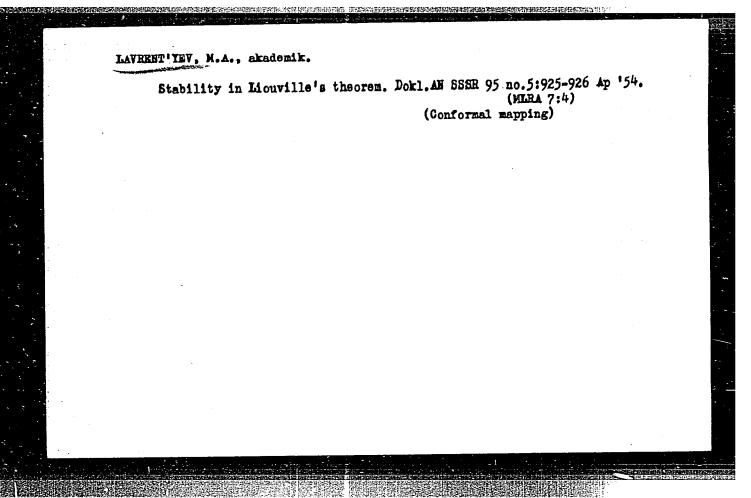
BELINSKIY, P.P.; LAVRENT'YEV, M.A., akademik.

Metric properties of quasi-conformal mapping. Dokl.AN SSSR 93 no.4:589-590
D '53.   (MLRA 6:11)

1. Akademiya nauk SSSR (for Lavrent'yev).   (Surfaces, Representation of)

BITSADZE, A.V.; LAVRENT'YEV, M.A., akademik.

Inversion of a system of singular integral equations. Dokl.AN SSSR 93 no.4:
595-597 D '53.   (MLRA 6:11)

1. Akademiya nauk SSSR (for Lavrent'yev). 2. Matematicheskiy institut im.
V.A.Steklova Akademii nauk SSSR (for Bitsadze).   (Integral equations)

LAVRENT'YEV, M.A., akademik.

Stability in Liouville's theorem. Dokl.AN SSSR 95 no.5:925-926 Ap '54.
(MLRA 7:4)
(Conformal mapping)

Lavrent'yev, M.A.

AID P - 2839

Subject   : USSR/Electricity

Card 1/1   Pub. 27 - 28/30

Authors   : Academicians A. N. Nesmeyanov, A. V. Topchiyev,
                A. F. Ioffe, P. L. Kapitsa, M. A. Lavrent'yev,
                D. V. Skobel'tsyn, V. A. Fok

Title   : Albert Einstein (3.14.1879-4.18.1955) (Current
                events)

Periodical : Elektrichestvo, 6, 85-86, Je 1955

Abstract   : On the occasion of the death of Albert Einstein,
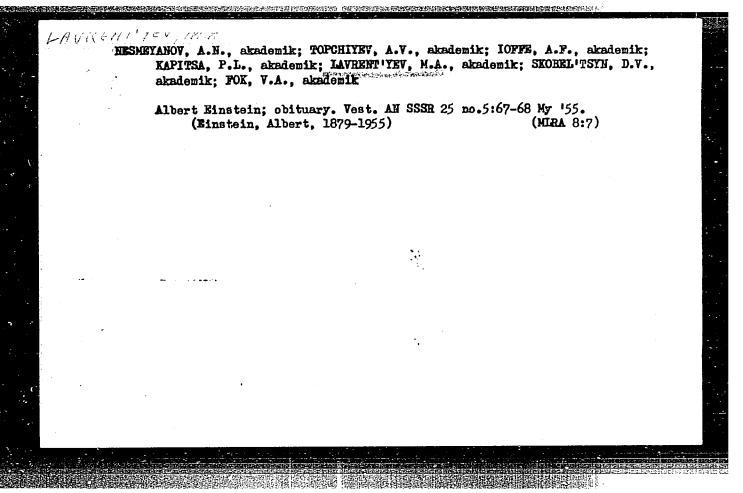   the undersignes academicians present a short homage
                to commemorate his scientific activities.

Institution : None

Submitted   : No date

LAVRENT'EV, M.A.

NESMEYANOV, A.N., akademik; TOPCHIYEV, A.V., akademik; IOFFE, A.F., akademik; KAPITSA, P.L., akademik; LAVRENT'YEV, M.A., akademik; SKOBEL'TSYN, D.V., akademik; FOK, V.A., akademik

Albert Einstein; obituary. Vest. AN SSSR 25 no.5:67-68 My '55.
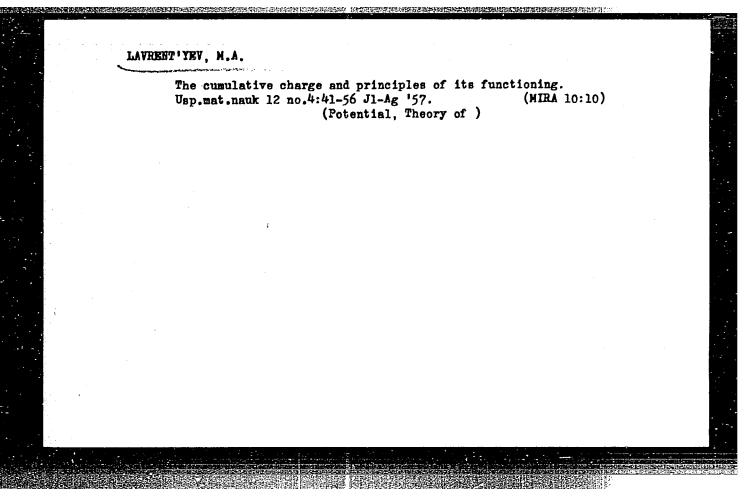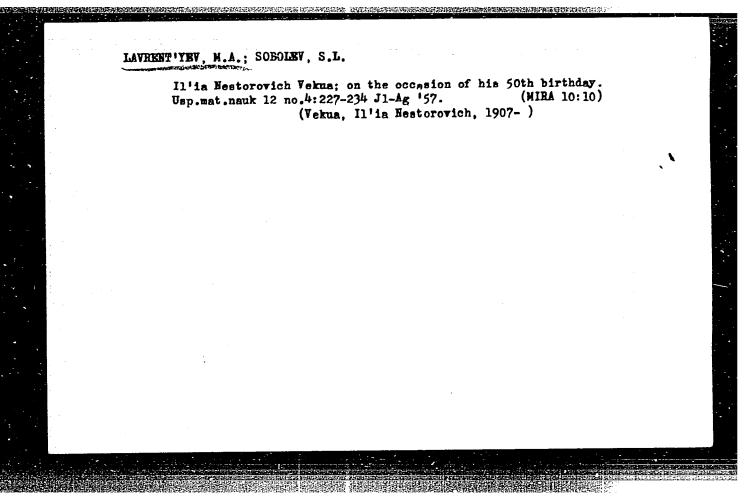   (Einstein, Albert, 1879-1955)   (MIRA 8:7)

ALEKSANDROV, A.D., redaktor; KOLMOGOROV, A.N., akademik, redaktor; LAVRENT'YEV, M.A., akademik, redaktor; RYVKIN, A.Z., redaktor izdatel'stva; POLI-VANOVA, Ye.B., tekhnicheskiy redaktor; ZELENKOVA, Ye.V., tekhnicheskiy redaktor

[Mathematics, its content, methods, and significance] Matematika, ee soderzhanie, metody i znachenie. Moskva. Vol.1. 1956. 294 p. Vol.2. 1956. 395 p. Vol.3. 1956. 336 p. (MIRA 9:12)

1. Akademiya nauk SSSR. Matematicheskiy institut. 2. Chlen-korrespondent AN SSSR (for Aleksandrov)
     (Mathematics)

LAVRENT'YEV, M.A.

The cumulative charge and principles of its functioning.
Usp.mat.nauk 12 no.4:41-56 Jl-Ag '57.   (MIRA 10:10)
                    (Potential, Theory of)

LAVRENT'YEV, M.A.; SOBOLEV, S.L.

Il'ia Nestorovich Vekua; on the occasion of his 50th birthday.
Usp.mat.nauk 12 no.4:227-234 Jl-Ag '57.   (MIRA 10:10)
                (Vekua, Il'ia Nestorovich, 1907-)

Lavrent'yev, M.A.

42-6-15/17

AUTHOR: ALEKSANDROV,P.S., VEKUA,I.N., KELDYSH,M.V., LAVRENT'YEV, M.A.

TITLE: Vladimir Ivanovich Smirnov (to his 70th Birthday) (Vladimir
              Ivanovich Smirnov (k semidesyatiletiyu so dnya rozhdeniya)

PERIODICAL: Uspekhi Matematicheskikh Nauk, 1957, Vol.12,Nr.6,pp.197-205 (USSR)

ABSTRACT: This is a short biography of V.I.Smirnov with an appreciation
              of his mathematical and pedagogical merits. A complete list
              of his publications with 109 numbers and a photo of the
              celebrator of the jubilee are given.

AVAILABLE: Library of Congress

Card 1/1

30-12-1/45

AUTHOR: Lavrent'yev, M. A., Academician

TITLE: The Development of Science in Siberia and in the Far East
            (Razvitiye nauki v Sibiri i na Dal'nem Vostoke)

PERIODICAL: Vestnik AN SSSR, 1957, Vol. 27, Nr 12, pp. 3-7 (USSR)

ABSTRACT: The XX Congress of the Communist Party of the Soviet Union
            outlined a grandiose plan for the rapid   development of the
            production forces in Siberia. Accordingly, Siberia is
            intended to be developed during the coming 10 years into
            the most important base for coal production, for the production
            of electric energy, of heat- and energy capacities, -
            electrometallurgy, coal chemistry, electric chemistry, geo-
            chemistry - for the production of aluminum, magnesium,
            titanium, etc. In Siberia and in the Far East there are
            75 % of the total forrest arreas of the Soviet Union. Siberia
            is rich in deposits and virgin soil. For this reason it is
            planned, besides industrialization, to develop agriculture
            and forestry considerably. An important part will be allotted
            to science. Numerous scientists received the appeal made by
            the party and the government, to promote and to further science
            in the Eastern parts of the country with enthusiasm. A group
            of scientists of the AN USSR suggested that a large scientific

Card 1/5

The Development of Science in Siberia and in the Far East   30-12-1/45

center be founded in Siberia, and expressed the wish to cooperate. On May 18, 1957 the Council of Ministers of the USSR accepted a resolution to organize a department of the AN in Siberia and to build a "scientific" town for this purpose near Novosibirsk. For the preparation of concrete measures an organizing committee was formed. Together with the directors of the future institutes, its members this year visited Novosibirsk, Krasnoyarsk, Irkutsk, Yakutsk, and Vladivostok. They made themselves acquainted with the state of the branches and discussed matters with the representatives of local social and economic organisations. It was also their task to select the complexes for institutes as well as to decide about their projecting and the order in which they are to be built. The project accepted by the presiding committee provides for the establishment of 13 institutes intended to comprise a whole complex of scientific problems. In this project also preliminary ideas concerning the establishment of a second scientific center in the Irkutsk area as well as concerning the creation of individual scientific institutions in other Siberian branches of the AN

Card 2/5   will be submitted. A characteristic feature of modern science

The Development of Science in Siberia and in the Far East   30-12-1/45

is its complexity. Today science knows no limitations or
separate areas that could lead an independent life. A particular
position is occupied by mathematics, but also mathematics
can no longer exist without radioengineering and without
the physics of solids. The isotope method extends to all
fields of science. For this reason whole complexes of
institutes must be established when new scientific centers
are founded. It would, however, be impossible to found new
institutes without the assistance of young scientists. There
exists already a new generation of learned men who,
although they do not yet have any academic degrees,
nevertheless have carried out valuable research work.
Furthermore, young people must be offered a possibility of
continuing their scientific training in order to increase the
number of young scientists. The creation of good libraries
is of essential importance. Living conditions in the new
center must be such that they not only comply with modern
building methods but must also fit into the beautiful Siberian
landscape. The scientific town will contain a number of
institutes, the problems of which will be found in the fields
of mathematics, physics, chemistry, mechanics, and other

Card 3/5   technical sciences. Besides, an institute for highfrequency

The Development of Science in Siberia and in the Far East   30-12-1/45

is intended to be established, as also a university with physical, chemical, mathematical, mechanical, geological and geophysical and medicalbiological faculties for 1500 students. Near the town an experimental plant of great dimensions (intended for 1000 workman) will be established. This plant is intended to produce apparatus and devices for all institutes of the Siberian department. The living area is calculated to be able to house 15-20.000 inhabitants. The working capacity of the printing press, which will be established together with the municipal executive committee of Novosibirsk, will amount to from 6-8000 printed sheets. The library is intended to contain 4 million volumes. The committee of organization received valuable reports from the municipal administration and the party of Novosibirsk as well as from the West-Siberian branch of the AN under professor T. F. Gorbachev. The entire work was made possible only by the assistance which was rendered by the departments of the AN USSR, in particular thanks to the active work performed by the members of the Academy, N. N. Semenov, D. I. Shcherbakov, A. P. Vinogradov, L. A. Artsimovich, P. L. Kapitsa, I. V. Kurchatov, V. A. Engel'gardt and I. M. Vinogradov.

Card 4/5

The Development of Science in Siberia and in the Far East   30-12-1/45

AVAILABLE: Library of Congress

1. Science—Development—USSR

Card 5/5

LAVRENT'YEV, M.A.

USSR/MATHEMATICS/Theory of functions   CARD 1/2   PG - 867

SUBJECT
AUTHOR   LAVRENTJEV M.A., ŠABAT B.M.
TITLE   Geometrical properties of the solutions of non-linear systems
             of partial differential equations.

PERIODICAL   Doklady Akad. Nauk 112, 810-811 (1957)
             reviewed 6/1957

In a somewhat extended sense let the system of differential equations

$$(1) \qquad F_i(x,y,u,v, \frac{\partial u}{\partial x}, \frac{\partial u}{\partial y}, \frac{\partial v}{\partial x}, \frac{\partial v}{\partial y}) = 0 \qquad (i=1,2)$$

be strongly elliptic (compare Lavrentjev, Mat.Sbornik, n.Ser. 21, 2, (1947)).
The solution

$$(2) \qquad w = f(z) = u(x,y)+iv(x,y)$$

of (1) is called a quasi-conformal mapping which corresponds to (1).
Theorem 1: To every Riemannian surface of hyperbolic type F and to every
system (1) there exists a homeomorphic, quasi-conformal mapping (2) which
corresponds to (1) and which maps F onto the unit circle.
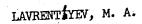Theorem 2: Every solution $w = f(z)$ of (1) with $u \neq$ const, $v \neq$ const, being

Doklady Akad. Nauk 112, 810-811 (1957)   CARD 2/2   PG - 867

differentiable in the domain D induces a homeomorphic mapping of D onto
a certain Riemannian surface.
The theorems permit to extend all topological properties of analytic
functions to the solutions of strongly elliptic systems (maximum principle,
argument principle etc.).

LAVRENTIYEV, M. A.

"On Some Problems of Quasi-Conformal mapping."

paper submitted at International Congress Mathematicians, Edinburgh, 14 - 21 Aug 58.

EYLER, Leonard [Euler, Leonhard]; LAVRENT'YEV, M.A., red.; YUSHKEVICH,
A.P., red.; GRIGOR'YAN, A.T., red.; GESSEN, L.V., red.izd-va;
POLENOVA, T.P., tekhn.red.

[Leonhard Euler; a collection of articles presented to the Academy
of Sciences of the U.S.S.R. in honor of the 250th anniversary of
his birth] Leonard Eiler; sbornik statei v chest' 250-letiia so
dnia rozhdeniia, predstavlennykh Akademii nauk SSR, 1958. 606 p.
                                                        (MIRA 12:4)

1. Predsedatel' Eylerovskogo yubileynogo komiteta Akademii nauk
SSSR (for Lavrent'yev).
              (Euler, Leonhard, 1707-1783)

16(1)

PHASE I BOOK EXPLOITATION   SOV/1164

Lavrent'yev, Mikhail Alekseyevich and Shabat, Boris Vladimirovich

Metody teorii funktsiy kompleksnogo peremennogo (Methods in the Theory of a Complex Variable) 2d. ed., rev. Moscow, Fizmatgiz, 1958. 678 p. 25,000 copies printed.

Ed.: Smolyanskiy, M.L.; Tech. Ed.: Gavrilov, S.S.

PURPOSE: This book is intended for readers interested in the application to physics and engineering problems of the theory of functions of a complex variable. It can be used as a textbook by students of the physics, mechanico-mathematics and physicomathematics faculties of vtuzes and universities.

COVERAGE: The basic concepts of the theory of functions of a complex variable are given in condensed form. Only those methods of the theory of functions of a complex variable which are of great value in applications are presented. Considerable attention is given to conformal mapping and boundary value problems. Many special functions of the theory of a complex variable which are of great importance in physics and engineering are analyzed and fundamentals of operational analysis are given.

Card 1/18

2

Theoretical presentations are supported by many illustrative examples. Many applications of the theory of functions of a complex variable to various physics and engineering problems are given. The author thanks Academician M.V. Keldysh, A.V. Bitsadze, I.G. Aramanovich, Kim Sen Yen, [initials not given] Ipatov, [initials not given] Taich, G. Yu. Stepanov, M.A. Yevgrafov, and N.N. Moiseyev for their help in preparing the book. References are given at the end of each chapter.

TABLE OF CONTENTS:

Card 2/18
2

AUTHOR: Lavrent'yev, M.A., Academician   SOV-25-58-9-2/62

TITLE: Advanced Science Moves East (Bol'shaya nauka idёt na vostok)

PERIODICAL: Nauka i zhizn', 1958, Nr 9, pp 1-4 and **inside front cover** (USSR)

ABSTRACT: The author outlines the plans for the future organization
            of Siberian industry. The final aim is to surpass the
            U.S.A. in all fields of industry. The government has de-
            cided to unite the West and East Siberian branches, the
            Yakutsk and Far-Eastern branches of the Academy of Sciences
            of USSR in one powerful organization - the Siberian Section
            of the Academy of Sciences. A special city will be built
            not far from Novosibirsk with living quarters for professors,
            scientists and students and ultra modern laboratories. In
            March, 8 new members of 27 **corresponding members**   of the Si-
            berian section of the AS USSR were elected. The new 8 members
            are: I.N. Vekua, P.Ya. Kochina, V.D. Kuznetsov, A.I. Mal-
            tsev, Yu.N. Rabotnov, V.S. Sobolev, A.A. Trofimuk, and A.L.
            Yanshin. The author tells of the projected construction of
            oil processing plants in Bashkiriya and Tatariya, the by-
            products of which will be used to produce various plastics,
            artificial rubber and other synthetic products. Construction
            of numerous thermo-electric power plants is planned, because

Card 1/2

Great Science Goes East   SOV-25-58-9-2/62

of the huge reserves of cheap coal in the area. The Si-
berian Section of the AS will collaborate with the Chinese
government in the task of industrializing the Amur River
basin. The regulation of the upper parts of this river
will open up new fishing and lumbering areas. The scien-
tists also decided to shorten the way to Sakhalin island
by connecting the Amur River with the Tatar Strait in the
Tabo bay region. There are 4 drawings.

1. Industry--Siberia   2. Industry--Organization

Card 2/2

LAVRENT'YEV, M. A.

SOV/3965

PHASE I BOOK EXPLOITATION

89(0)

Iskusstvennyye sputniki zemli, vyp. 3 (Artificial Earth Satellites, No. 3)
Moscow, Izd-vo Akademii nauk SSSR, 1959. 125 p. 5,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Resp. Ed.: L.V. Kurnosova; Ed. of Publishing House: L.V. Samsonenko; Tech. Ed.: Yu. Rylina.

PURPOSE: This collection of articles is the third in a series intended to disseminate data collected from artificial earth satellite investigations to scientists.

COVERAGE: The collection of articles deals with various problems arising in the operation of artificial satellites. The papers also cover the use of artificial satellites as scientific instruments for various types of geophysical investigations.

4. Beletskiy, V.V., and V.V. Produrin. On Perturbations in the Orbits of Artificial Satellites Caused by the Resistance of the Air   39

5. Yakhnin, I.M., and V.V. Beletskiy. Observation of Artificial Satellites Using the Anticipation Method (metod obidaniyu)   47

6. El'yashevk, B.Ke. Secular Variations of Orbit Elements as a Function of the Resistance of the Air   54

7. Lavrent'yev, M.A. Problem of Puncture at Cosmic Speeds   61

8. Shklovskiy, I.S., and V.G. Kurt. Determination of the Density of the Atmosphere at an Altitude of 430 km by the Method of Sodium-Vapor Diffusion   66

9. Ivanchikov, I.M., and Ya.M. Savartz. Methods of Preventing Interference Currents Arising at the Point of Input of an Electrostatic Fluxmeter During Operation in a Conductive Medium   77

10. Mikhnevich, V.V., V.I. Danilin, A.I. Repnev, and V.A. Sokolov. Some Results in Determining the Structural Parameters of the Atmosphere with the Aid of the Third Soviet Sputnik   84

11. Istomin, V.G. Radio-frequency Mass Spectrometer for Investigation of the Ion Composition of the Upper Atmosphere   98

12. Rozhov, S.A. Manometer Error Caused by Small Leaks in the Envelope of an Artificial Satellite   113

13. Zmuev, Yu.I. On the Problem of Interaction of an Artificial Satellite and the Magnetic Field of the Earth   118

AVAILABLE: Library of Congress

Card 3/3

AC/jb
10-30-59

STOKER, James Johnston, (1905-   ); LAVRENT'YEV, M.A., red.; MOISEYEV, N.N., red.

[Water waves; the mathematical theory with applications] Volny na vode; matematicheskaia teoriia i prilozheniia. Pod red. M.A.Lavrent'eva.i N.N.Moiseeva. Moskva, Izd-vo inostr. lit-ry, 1959. 617 p.

(MIRA 14:11)

(Waves)   (Hydrodynamics)

28(0)

AUTHORS: Lavrent'yev, M. A., Academician,   SOV/30-59-1-8/57
            Chernenko, A. K.

TITLE: Development of Science in Siberia (Razvitiye nauki v Sibiri)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 65-67   (USSR)

ABSTRACT: In eastern USSR a great scientific center, the Sibirskoye
            otdeleniye Akademii nauk SSSR (Siberian Branch of the
            Academy of Sciences, USSR), is growing and developing. A
            plenary meeting of the Section took place in Novosibirsk, the
            task of which was the approval of the working scheme for 1959.
            More than 5,000 workers are building institutes of hydro-
            dynamics, geology and geophysics, nuclear physics, and others.
            The pace of the work is still insufficient for the require-
            ments. Scientists approved their first summarized working
            scheme, including the fields of physical-mathematical, tech-
            nical, mathematical, and mechanical sciences. The examination
            of mechanical properties of polymers, the fields of heat
            physics and chemical sciences are also mentioned. The pro-
            spects of discovering petroleum,   gas, and other deposits
            shall also be examined. In addition, the history of the

Card 1/2

Development of Science in Siberia   SOV/30-59-1-8/57

        peoples of Siberia and the Far East shall be studied.
        There are 5 figures.

Card 2/2

LAVRENT'YEV, M., akademik; NEKRASOV, N.

Let us develop the natural resources of Siberia. NTO no.3:5-7
Mr '59.   (MIRA 12:6)

1. Predsedatel' Sibirskogo otdeleniya AN SSSR (for Lavrent'yev).
2. Chlen-korrespondent AN SSSR, predsedatel' Sibirskogo Soveta
ekspeditsionnykh issledovaniy (for Nekrasov).
                (Siberia--Economic policy)

KONSTANTINOV, B.P.; DEBORIN, A.M., akademik; PEYVE, Ya.V.; IOFFE, A.F.,
    akademik; MIKHAYLOV, A.I., prof.; SATPAYEV, K.I., akademik;
    ZHUKOV, Ye.M., akademik; LAVRENT'YEV, M.A., akademik; SEMENOV, N.N.,
    akademik; PAVLOVSKIY, Ye.N., akademik; MINTS, I.I., akademik;
    SISAKYAN, N.M.; ROMASHKIN, P.S.; FEDOROV, Ye.K.; STECHKIN, B.S.,
    akademik; MAYSKIY, I.M., akademik; PAVLOV, Todor, akademik;
    ARBUZOV, A.Ye., akademik; VASIL'YEV, N.V., doktor ekon.nauk;
    BELOUSOV, V.V.; MITIN, M.B., akademik; BLAGONRAVOV, A.A., akademik;
    KANTOROVICH, L.V.; RYBAKOV, B.A., akademik; NEMCHINOV, V.S., akademik

    Discussion of the address. Vest. AN SSSR 29 no.4:34-63 Ap '59.
                                        (MIRA 12:5)

    1.Chlen-korrespondent AN SSSR (for Konstantinov, Peyve, Sisakyan,
    Romashkin, Fedorov, Belousov, Kantorovich).
                    (Science)

BARDIN, I.P., akademik, glavnyy red. [deceased]; NEKRASOV, N.N., otv.
red.toma; SLAVIN, S.V., doktor ekon.nauk, red.toma; SHKOL'NIKOV,
M.G., kand.ekon.nauk, red.toma; LAVRENT'YEV, M.A., akademik, red.;
VOL'FKOVICH, S.I., akademik, red.; DIKUSHIN, V.I., akademik, red.;
NEMCHINOV, V.S., akademik, red.; VEYTS, V.I., red.; LEVITSKIY,
O.D., red.; PUSTOVALOV, L.V., red.; KHACHATUROV, T.S., red.;
ROSTOVTSEV, N.F., akademik, red.; POPOV, A.N., red.; GRAFOV, L.Ye.,
red.; GASHEV, A.D., red.; PROBST, A.Ye., prof., red.; VASYUTIN,
V.F., prof., red.; KROTOV, V.A., prof., red.; VASIL'YEV, P.V.,
doktor ekon.nauk, red.; LYUDOGOVSKIY, G.I., kand.tekhn.nauk, red.;
LETUNOV, P.A., kand.geol.-mineral.nauk, red.; MAZOVER, Ya.A., red.
izd-va; KASHINA, P.S., tekhn.red.

[Comprehensive regional and interregional problems; [conference
reports]] Raionnye i mezhraionnye kompleksnye problemy; [trudy
konferentsii]. Moskva, Izd-vo Akad.nauk SSSR, 1960. 190 p.
(MIRA 14:1)

1. Konferentsiya po razvitiyu proizvoditel'nykh sil Vostochnoy
Sibiri. 1958. 2. Chleny-korrespondenty AN SSSR (for Nekrasov,
Veyts, Levitskiy, Pustovalov, Khachaturov). 3. Sovet po izucheniyu
proizvoditel'nykh sil pri Prezidiume Akademii nauk SSSR (for Nekrasov,
Shkol'nikov, Slavin). 4. Predsedatel' Soveta po izucheniyu pro-
izvoditel'nykh sil pri Prezidiume AN SSSR (for Nemchinov).5. Vse-
soyuznaya akademiya sel'skokhozyaystvennykh nauk im. V.I.Lenina (for
Rostovtsev). 6. Deyatvitel'nyy chlen Akademii stroitel'stva i arkhi-
tektury SSSR (for Panov).   (Siberia, Eastern--Economic policy)

BARDIN, I.P., akademik, glavnyy red. [deceased]; VOL'FKOVICH, S.I., aka-
demik, otv.red.toma; UVAROV, G.V., red.toma; KOMAROV, V.P.,
dotsent, red.toma; LAVRENT'YEV, M.A., akademik, red.; DIKUSHIN,
V.I., akademik, red.; NEMCHINOV, V.S., akademik, red.; VEYTS, V.I.,
red.; LEVITSKIY, O.D., red.; NEKRASOV, N.N., red.; PUSTOVALOV, L.B.,
red.; KHACHATUROV, T.S., red.; ROSTOVTSEV, N.P., akademik, red.;
POPOV, A.N., red.; GRAFOV, L.Ye., red.; GASHEV, A.D., red.; PROBST,
A.Ye., prof., red.; VASYUTIN, V.F., prof., red.; KROTOV, V.A., prof.,
red.; VASIL'YEV, P.V., doktor ekonom.nauk, red.; LYUDOGOVSKIY, G.I.,
kand.tekhn.nauk, red.; LETUNOV, P.A., kand.geol.-mineral.nauk, red.;
SHKOL'NIKOV, M.G., kand.ekonom.nauk, red.; BANKVITSER, A.L., red.
izd-va; BRUZGUL', V.V., tekhn.red.

[Chemical industry] Khimicheskaia promyshlennost'. Moskva, 1960.
202 p.   (MIRA 13:7)

1. Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh
sil. Sibirskoye otdeleniye. 2. Chleny-korrespondenty AN SSSR
(for Veyts, Levitskiy, Nekrasov, Pustovalov, Khachaturov). 3. Vse-
soyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina
(for Rostovtsev). 4. Deystvitel'nyy chlen Akademii stroitel'stva
i arkhitektury SSSR (for Popov). 5. Zamestitel' predsedatelya
Gosplana RSFSR (for Grafov). 6. Chlen Gosplana RSFSR (for Gashev).
7. Zamestitel' predsedatelya Gosudarstvennogo komiteta Soveta Mi-
nistrov SSSR po khimii (for Uvarov).
                    (Chemical industries)

LAVRENT'YEV, M. A.   (Novosibirsk)

    "The Impinging (impaction) at Cosmic Rates."

report presented at the First All-Union Congress on Theoretical and Applied
Mechanics, Moscow, 27 Jan - 3 Feb 1960.

KUZNETSOV, V.M. (Novosibirsk); LAVRENT'YEV, M.A. (Novosibirsk); SHER, Ye. N. (Novosibirsk)

Directed earthmoving by means of explosives. PMTF no.4:49-50 N-D '60.   (MIRA 14:7)
                    (Earthwork)
                    (Explosions)

LAVRENT'YEV, M.A., otv.red.; MIKHAYLOV,.G.K., red.; BITSADZE, A.V.,
red.; VEKUA, I.N., red.; DZHANELIDZE, G.Yu., red.; LUR'YE, A.I.,
red.; MANDZHAVIDZE, G.F., red.; MIKHAYLOV, G.K., red.; SEDOV, L.I.,
red.; SOBOLEV, S.L., red.; SOKOLOVSKIY, V.V., red.; KHRISTIAHOVICH,
S.A., red.; SHERMAN, D.I., red.; RYVKIN, A.Z., red.izd-va;
VOLKOVA, V.V., tekhn.red.

[Problems in the mechanics of solids] Problemy mekhaniki sploshnoi
sredy; k semidesiatiletiiu akademika N.I.Muskhelishvili. Moskva,
1961. 577 p.   (MIRA 14:3)

1. Akademiya nauk SSSR.
      (Mechanics, Analytic)   (Elastic solids)

Papers submitted for the 10th Pacific Science Congress, Honolulu, Hawaii 21 Aug-6 Sep 1961.

KOLESNIK, A. G., FIKOVANOV, A. A., and IVANOVA, Z. S., Moscow State University, Physical Faculty, Chair of Marine Physics and Terrain Waters - "On the calculation of rate of radioactivity spreading in depths" (Section VII.B.6)

KOLTUN, V.M., Institute of Zoology - "The method of spicule analysis and possibilities of its use in paleogeographical studies of the Pacific Ocean" (Section III.C)

KORYTNIKOVA, Ye.V., Institute of Geology - "Distribution of spores and pollen of terrestrial plants in bottom sediments of the Pacific" (Section III.A)

KORT, V. G., Director, Institute of Oceanology - "The heat exchange between the Antarctic waters and the adjacent oceanic waters" (Section VII.D.1)

KOSHLIAKOV, M. N., Institute of Oceanology - "An example of the computation of the deep currents in the northeastern Pacific" (Section VII.B)

KOZLYANINOV, M. V., and KOLENKO-NIKITIN, Olga I., Institute of Oceanology - "The interrelation between turbidity, hydro-plankton and primary production" (Section III.C.4)

KRAMATININ, M. V., Institute of Oceanology - "On the relation between water transparency and the character of currents in some areas of the Pacific Ocean" (Section VII.B)

KOZODIEVSKAYA, Irina P., KRASHUMA, R. N., VINTOV, R. S., SEVEL, S. A., DAVYDOVA, M. K., and GALPERIN, B. I., Institute of Earth Physics imeni O. Yu. Schmidt - "Structure of the earth crust in the transition zone from the northwestern part of the Pacific to the Asiatic continent" (Section VII.C.2)

KOZODIEVSKAYA, Irina P., KRASHUMA, R. M., and SUBBIN, S. M., Institute of Earth Physics imeni O. Yu. Schmidt - "Specific features of the sedimentary layer in the Okhotsk Sea and in the adjacent parts of the Pacific" (Section VII.C.2)

KRYTKIN, V. M., SYKOV, S. M., UDINTSEV, G. B., IUDICHEV, Yu. P., BUDOV, A. B., and LIMBERG, G. P., Institute of Oceanology - "On the relation between sedimentation and bottom topography in the northwestern part of the Pacific Ocean" (Section VII.C.1)

KROPOTKIN, P. I., Institute of Geology - "The tectonic map of the Pacific Ocean and the circum-Pacific mobile belt (scale 1:10,000,000)" (Section VII.C)

KUPRIIANOV, N. A., and SAVARENSKY, Ye. F., The Siberian Department of the Academy of Sciences USSR - "On the results of investigations of tsunami in the USSR" (Section V.B.1)

KUZNETSOVA, Y. V., Institute of Oceanology - "Hydrological data involved with oceanic troughs in the Pacific and some problems connected with prospect research" (Section VII.B)

LEVIN, M. G., Institute of Ethnology - "Once more on the Ainu problem" (Section II.B)

LAVRENTYEV, M. A., and SAVARENSKY, Ye. F. - "The composition of organic suspended material in the Pacific in connection with the problem of sedimentation" (Section VII.C.1)

LISITSIN, A.P., Institute of Oceanology - "Bottom sediments in the Antarctic" (Section VII.D.1)

LUKYANOV, V. V., Institute of Oceanology - "Cyclonic activity and climatologic fronts in the northern part of the Pacific Ocean" (Section VII.A)

LYUBTSOVA, T. G., All-Union Scientific Research Institute of Marine Fishing and Oceanography - "Some results of ichthyological investigations in the gulf of Alaska" (Section III.C)

MAGNITSKY, V. A., Moscow State University, Physical faculty, Chair of Hard Crust - "Geophysical data and the problem of the origin of the Pacific Ocean" (Section VII.C.2)

MEDVEDEV, V. S., Institute of Oceanology - "The specific features of beach formation in tidal seas" (Section VII.C.1)

MOKIEVSKII, O. B., Institute of Oceanology - "Qualitative-quantitative distribution of the littoral fauna and flora in the northwestern part of the Pacific" (Section III.C)

MUCHAM, Ivan O., Institute of Oceanology - "The process of early sedimentation in the areas of the Kuril Isle arc" (Section VII.C.1)

S/030/61/000/004/006/015
B105/B206

AUTHOR: Lavrent'yev, M. A., Academician, Chairman (see Association)

TITLE: Siberian Department

PERIODICAL: Vestnik Akademii nauk SSSR, no. 4, 1961, 60-63

TEXT: On January 13, 1961, the Plenary Session of the Sibirskoye otdeleniye
(Siberian Department) was held at Novosibirsk, and its Chairman, Academician
M. A. Lavrent'yev, mentioned the results of the scientific institutions for
1960. At the end of the last year, the Department consisted of 3 institutes
for comprehensive studies and 27 specialized institutes, 3 branches, 6
observatories and independent laboratories, as well as the Tsentral'nyy
botanicheskiy sad (Central Botanical Garden). Beside the scientific center
in Novosibirsk, the scientific systems in Vostochnaya Sibir' (East Siberia)
and Dal'niy Vostok [Soviet] Far East were also developed. The intensity of
cosmic rays and the physical processes of the sun were studied at the
Yakutskiy filial (Yakutsk Branch) and Dal'nevostochnyy filial ([Soviet] Far
East Branch), Vostochno-Sibirskiy filial (East Siberian Branch). The Insti-
tut gidrodinamiki (Institute of Hydrodynamics) jointly with the East

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Siberian Department

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Siberian Branch, elaborated proposals for combatting cold-brittleness of machines and constructions. The Institut fiziki (Institute of Physics) studied structure and magnetic properties of substances. The institut Khimicheskoy kinetiki i goreniya (Institute of Chemical Kinetics and Combustion), institut Teoreticheskoy i prikladnoy mekhaniki (Institute of Theoretical and Applied Mechanics), Transportno-energeticheskiy Institut (Institute of Transportation and Power Engineering) investigated the problems of combustion processes, turbulent combustion, the combustion of condensed systems, and studied high-pressure and high-temperature furnaces for steam-gas turbines. Heat exchange, thermodynamic and thermophysical properties of substances were studied at the Institut teplofiziki (Institute of Thermophysics). The establishment of the Vychislitel'nyy tsentr (Calculation Center) at the Institut matematiki (Institute of Mathematics) was of great influence on mathematical studies. Jointly with the Institut kataliza (Institute of Catalysis), contact apparatus for the production of sulfuric acid were calculated by means of an electronic computer. The properties of anisotropic superconductors were studied at the Institut radiofiziki i elektroniki (Institute of Radiophysics and Electronics) and the passage of ultrashort waves at the Buryatskiy kompleksnyy nauchno-

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Siberian Department

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issledovatel'skiy institut (Buryatskiy Scientific Research Institute for Comprehensive Studies). The design of an automatic production line for the manufacture of sections of electrolytic capacitors was elaborated at the Institut avtomatiki i elektrometrii (Institute of Automation and Electrometry). The problem of rock pressure was studied at the Institut gornogo dela (Mining Institute). Prototypes of impulse hydroelectric installations for a pressure up to 800-1000 kg/cm^2 were built at the Institut gidrodinamiki (Institute of Hydrodynamics). The model of a vibroshute of the type BX-3 (VZh-3) (vibrozhelob) was designed at the Yakutsk Branch. A class of complex compounds, called by Academician N. S. Kurnakov "imaginary compounds", was discovered at the Institut neorganicheskoy khimii (Institute of Inorganic Chemistry). Problems of the formation of natural salts in lakes were solved at the Khimiko-metallurgicheskiy institut (Institute of Chemistry and Metallurgy). New data on the isolation of aromatic compounds were obtained at the Novosibirskiy institut organicheskoy khimii (Novosibirsk Institute of Organic Chemistry). Free radicals in solid bodies were studied at the Institut khimicheskoy kinetiki i goreniya (Institute of Chemical Kinetics and Combustion). At the Institut geologii i geofiziki (Institute of Geology and Geophysics), the petroleum- and gas deposits of

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Siberian Department

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the front depression of the Vitimo-Patomskaya folding system and the
Gilyako-Abukanskaya zone of the Sakhalin mountain ranges were determined.
Ancient diamond fields were discovered in Zapadnaya Yakutiya (West Yakutiya)
as well as in the basin of the river Belaya. Studies were finished on the
stratigraphy of the late Pre-Cambrian and the early Paleozoic of the USSR,
the Jurassic and cretaceous systems of the Arctic, the Cambrian of the
Sibirskaya platforma (Siberian Platform) and the upper cretaceous layer
of the Chulymo-Yeniseyskaya depression. The Kamchatka Geological-geophysi-
cal Observatory studied the active volcanoes of the Kamchatka and the
properties of tectonics and seismism of the Pacific Zone. The Institut
biologii i meditsiny (Institute of Experimental Biology and Medicine) in-
vestigated the hypertonia of the "small circle" (malyy krug). The process
of the synthesis of nucleinic acids and proteins was developed at the
Institut tsitologii i genetiki (Institute of Cytology and Genetics). Prob-
lems of fertilizing were investigated at the Biologicheskiy institut
(Biological Institute). The Institut ekonomiki i organizatsii promyshlennogo
proizvodstva (Institute of Economics and Organization of Industrial Produc-
tion) studied the problem of manpower reserves. The transfer of the
scientific collaborators of the Institut yadernoy fiziki (Institute of
Nuclear Physics) and the Institut teplofiziki (Institute of Thermal Physics)
Card 4/5

Siberian Department

S/030/61/000/004/006/015
B105/B206

to Novosibirsk is to be concluded in 1961. Academician S. L. Sobolev reports on "Utilization of electronic computers for reading Maya manuscripts". This study was made at the computer Center.

ASSOCIATION: Sibirskoye otdeleniye (Siberian Department) [Abstracter's note: Name of Association was taken from first page of journal.]

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PHASE I BOOK EXPLOITATION   SOV/6011

Lavrent'yev, Mikhail Alekseyevich, Academician

Variatsionnyy metod v krayevykh zadachakh dlya sistem uravneniy ellipticheskogo
    tipa (Variational Method in Boundary-Value Problems for Systems of Equa-
    tions of the Elliptic Type) Moscow, Izd-vo AN SSSR, 1962. 135 p.
    4000 copies printed.

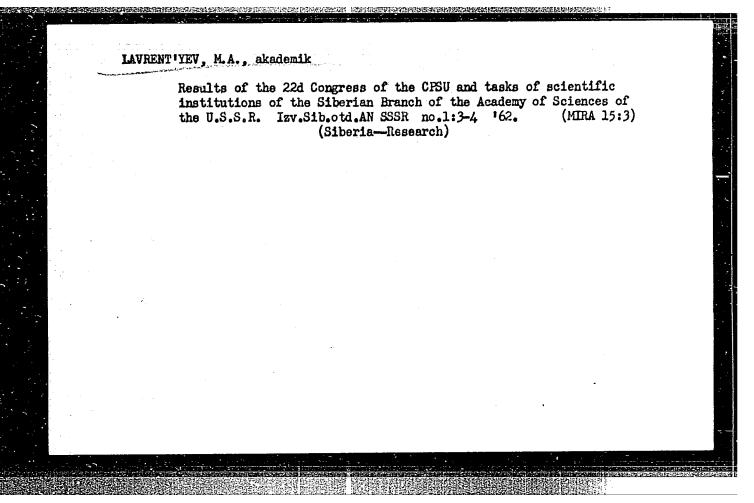Sponsoring Agency: Akademiya nauk SSSR. Sibirskoye otdeleniye.

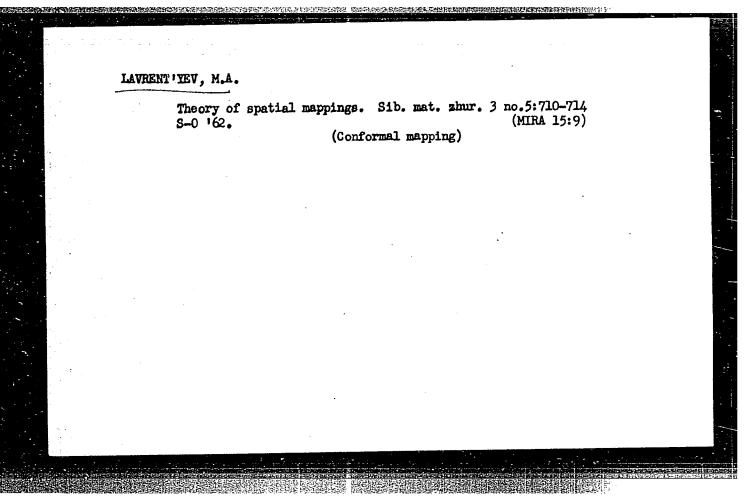Ed. of Publishing House: B. V. Shabat; Tech. Ed.: P. Polenova.

PURPOSE: This book is intended for mathematicians and engineers concerned with
    the solution of theoretical problems.

COVERAGE: The methods presented in this book are based on a number of geometrical
    properties of conformal and quasi-conformal mapping and use the general-princi-
    ple scheme of solution of variational problems first introduced by D. Gilbert
    and developed largely by L. Tonelli. The method stands on the boundary be-
    tween classical methods of analysis, with their concrete estimates, and the
    approximate formulas and methods of the theory of functions of a real
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Variational Method in Boundary-Value Problems (Cont.)   SOV/6011

variable. The book is so planned that it will be of interest to mathemati-
cians as well as to mechanical engineers, who are remote from the theory of
functions. According to the Preface, the author has made no attempt to pre-
sent the details of the proofs at length, and, in some cases, has limited him-
self to general ideas. Maximum generalizations of assumptions have not been
attempted, and problems connected with delicate theoretical-functional con-
siderations have been omitted. The author thanks Professor V. V. Shabat.
There are 77 references: 53 Soviet (4 translations), 12 English, 9 French,
and 3 German.

TABLE OF CONTENTS:

Card 2/4

LAVRENT'YEV, M. A.

"Some boundary peoblems in potential theory"

report submitted at the Intl Conf of Mathematics, Stockholm, Sweden,
15-22 Aug 62

LAVRENT'YEV, M.A., akademik

Results of the 22d Congress of the CPSU and tasks of scientific institutions of the Siberian Branch of the Academy of Sciences of the U.S.S.R. Izv.Sib.otd.AN SSSR no.1:3-4 '62. (MIRA 15:3)
(Siberia—Research)

LAVRENT'YEV, M.A.

Theory of spatial mappings. Sib. mat. zhur. 3 no.5:710-714
S-O '62.   (MIRA 15:9)
                    (Conformal mapping)

16.3000 ,

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S/199/62/003/005/003/004
B112/B186

M. A

AUTHOR: Lavrent'yev, A. M.

TITLE: On certain boundary value problems for systems of the elliptic type

PERIODICAL: Sibirskiy matematicheskiy zhurnal, v. 3, no. 5, 1962, 715-728

TEXT: Plane and spatial hydrodynamical problems are investigated. In the plane case, solutions

$$w = f(z, \Gamma_o, \Gamma) \qquad (2)$$

of strongly elliptic systems

$$F_1(x,y,u,v,u_x,u_y,v_x,v_y) = 0$$

$$F_2(x,y,u,v,u_x,u_y,v_x,v_y) = 0 \qquad (1)$$

are considered, which map a domain $D(\Gamma_o,\Gamma)$ bounded by the curves Γ_o and Γ quasi-conformally onto an interval $0 < v < h$ of the plane $w = u + iv$. In

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On certain boundary value...

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addition, it is assumed that u tends to infinity if x tends to infinity and that the condition u = 0 at the point x = 0 of the curve Γ_o is fulfilled. For certain classes of systems (1), the existence and uniqueness of the solution to the following principal problem are proved: The curves Γ_o and Γ'_1 being given for $x < x_o$ and $x < x_1$, respectively; such continuations of these curves are sought that the mapping w = f(z) fulfills the relations

$$\chi_o(V,\alpha,x,y) = 0; \quad \chi_1(V,\alpha,x,y) = 0 \qquad (5)$$

on the continuations. χ_o and χ_1 are given functions of the arguments

$V = \sqrt{u_x^2 + u_y^2}$, α,x,y, where α is the inclination of Γ in the point x,y. In the spatial case, homeomorphic differentiable mappings u = u(x,y,z), v = v(x,y,z), w = w(x,y,z) are sought, which satisfy a system of equations

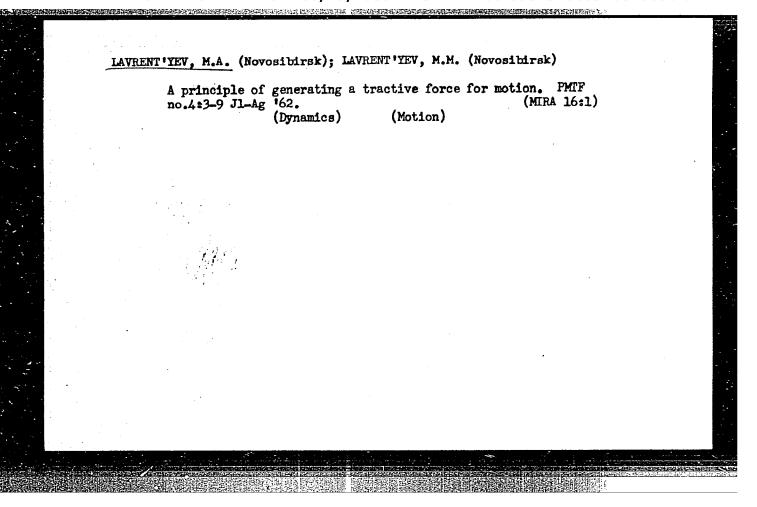$$F_i(x,y,z,u,v,w,u_x,u_y,u_z,\ldots,w_z) = 0 \quad (i = 1,2,3). \qquad (11)$$

Certain classes of systems (11) (harmonical mappings) for which Riemann's
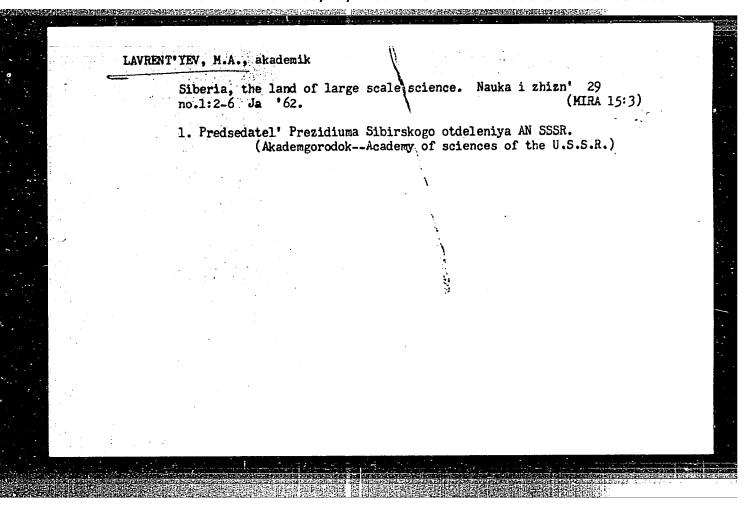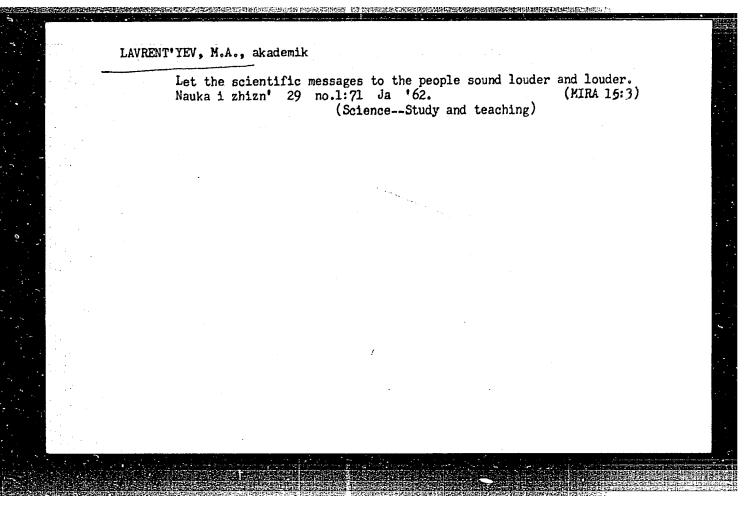
Card 2/3

On certain boundary value...

problem is unambiguously solvable are selected. Determining the solution
is reduced to the determining a potential u which describes the motion of
a fluid between two surfaces Γ_o and Γ. Approximate expressions for the
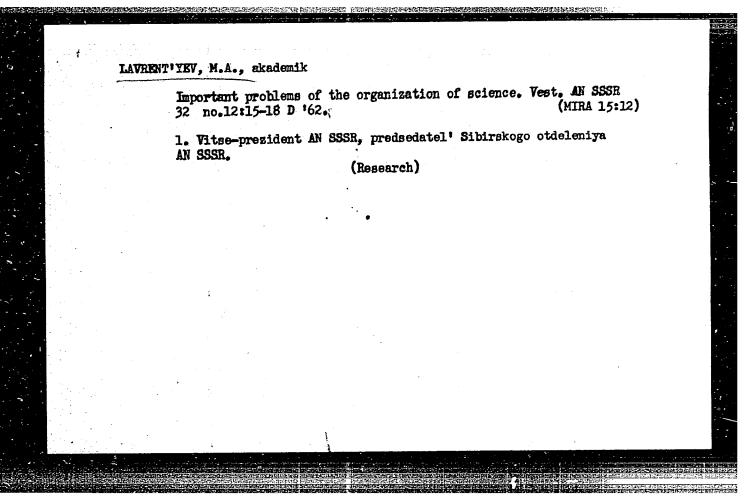boundary derivatives of the mapping are derived. There is 1 figure.

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LAVRENT'YEV, M.A. (Novosibirsk); LAVRENT'YEV, M.M. (Novosibirsk)

A principle of generating a tractive force for motion. PMTF
no.4:3-9 Jl-Ag '62.   (MIRA 16:1)
                (Dynamics)   (Motion)

LAVRENT'YEV, M.A., akademik

    Siberia, the land of large scale science. Nauka i zhizn' 29
    no.1:2-6 Ja '62.   (MIRA 15:3)

1. Predsedatel' Prezidiuma Sibirskogo otdeleniya AN SSSR.
        (Akademgorodok--Academy of sciences of the U.S.S.R.)

LAVRENT'YEV, M.A., akademik

        Let the scientific messages to the people sound louder and louder.
        Nauka i zhizn' 29 no.1:71 Ja '62.   (MIRA 15:3)
                      (Science--Study and teaching)

BUDKER, A.M.; LYAPUNOV, A.A., prof.; LAVRENT'YEV, M.A., akademik; VEKUA, I.N., akademik; MIGIRENKO, G.S., prof.; ZHURAVLEV, Yu.I., kand.fiziko-matem. nauk

Birth of a new method for the training of young scientists. Tekh.mol. 30 no.11:14-17 '62.   (MIRA 16:9)

1. Chlen-korrespondent AN SSSR (for Budker). 2. Predsedatel' Sibirs- kogo otdeleniya AN SSSR (for Lavrent'yev). 3. Rektor Novosibirskogo universiteta (for Vekua). 4. Sekretar' partiynogo komiteta Sibirs- kogo otdeleniya AN SSSR (for Migirenko). 5. Chlen TSentral'nogo komi- teta Vsesoyuznogo Leninskogo Kommunisticheskogo soyuza molodezhi (for Zhuravlev).

                         (Science—Study and teaching)
                (Siberia—Academy of Sciences of the U.S.S.R.)

LAVRENT'YEV, M.A., akademik

Important problems of the organization of science. Vest. AN SSSR
32 no.12:15-18 D '62.
(MIRA 15:12)

1. Vitse-prezident AN SSSR, predsedatel' Sibirskogo otdeleniya
AN SSSR.
(Research)

LAVRENT'YEV, M.A., akademik; FAVOROV, P.A., inzh.

Aleksei Nikolaevich Krylov. Sudostroenie 29 no.8:1-4 Ag '63.
(MIRA 16:10)
(Krylov, Aleksei Nikolaevich, 1863-1945)

L 18732-63   EPA(b)/EWT(1)/EPF(n)-2/BDS/T-2 AFFTC/ASD/SSD   Pd-4/   69
Pd-4
ACCESSION NR: AP3006119   S/0207/63/000/004/0003/0016

AUTHOR: Krasovskiy, Yu. P.; Lavrent'yev, M. A.; Moiseyev, N. N.; Ter-Krikorov,
A. M.; Shabat, A. B. (Novosibirsk, Moscow)

TITLE: Mathematical problems of the hydrodynamics of a liquid with free boundaries

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4, 1963, 3-16

TOPIC TAGS: liquid-motion theory, free boundary, free-stream flow, discontinuous
flow, wave phenomenon, standing wave, three-dimensional flow, Froude number,
gravitational wave, Cauchy-Poisson wave

ABSTRACT: The article reviews Soviet publications of the last four years dealing
with investigations in the theory of the motion of a liquid with free boundaries.
Data available from the authors' survey reports presented at the IV Vsesoyuzny*y
matematicheskiy s"yezd (4th All-Union Mathematical Congress) in Moscow in 1958
are used in this paper. New models of free-stream and discontinuous flows are
presented and discussed. Approximate methods for investigating wave phenomena,
based on the asymptotics of solutions, are reviewed, and exact solutions of
problems related to the theory of gravitational waves are analyzed. Attention

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ACCESSION NR: AP3006119

is directed to the basic problems of the theory of waves, such as those of flows with Froude numbers less than unity in the case of flow past an obstacle, of the theory of waves "in the large," of the theory of three-dimensional flows, and of the complex theory of unsteady waves, for example, periodic (standing) and Cauchy-Poisson waves, for which there is still no rigorous method. Orig. art. has: 12 figures and 13 formulas.

ASSOCIATION: none

SUBMITTED: 10Apr63   DATE ACQ: 11Sep63   ENCL: 00

SUB CODE: AI   NO REF SOV: 026   OTHER: 003

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LAVRENT'YEV, M.A., akademik; KUDRYAVTSEV, L.D., doktor fiz.-matem.nauk

World Congress of Mathematicians. Vest.AN SSSR 33 no.4:78-81
Ap '63.   (MIRA 16:4)
                    (Mathematics—Congresses)

POSPELOV, P.N., akademik; SMIRNOV, V.S.; LAVRENT'YEV, M.A., akademik;
    GAFUROV, B.G.; KEDROV, B.M.; DUBROVSKIY, S.M., doktor istor.nauk;
    KONSTANTINOV, F.V.

Discussion of the report. Vest. AN SSSR 33 no.8:29-39 Ag '63.
                                                        (MIRA 16:8)
1. Chleny-korrespondenty AN SSSR (for Smirnov, Gafurov, Kedrov,
Konstantinov).
                            (No subject heading)

LAVRENT'YEV, M.A., akademik

Development of science in the East of the U.S.S.R. Vest. AN
SSSR 34 no.6:3-11 Je '64   (MIRA 17:8)

1. Predsedatel' Sibirskogo otdeleniya AN SSSR.

LAVRENT'YEV, M.A.

Theory of mappings of three-dimensional regions. Sib. mat. zhur.
5 no.3:596-602 My-Je '64.

A sewing problem. Ibid.:603-607   (MIRA 17:6)

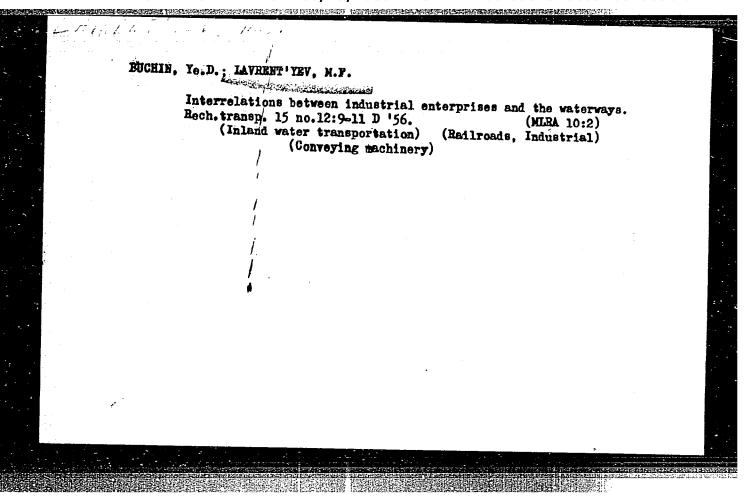LAVRENT'YEV, Mikhail Alekseyevich; SHABAT, Boris Vladimirovich;
     SMOLYANSKIY, M.L., red.

[Methods in the theory of functions of complex variables]
Metody teorii funktsii kompleksnogo peremennogo. Izd.3.,
ispr. Moskva, Nauka, 1965. 716 p.   (MIRA 18:6)

LAVRENT'YEV, M.A.

Toward further development of studies in the field of the physics of combustion and explosions. Nauch.-tekh. probl. gor. i vzryva no.1:3-4 '65.   (MIRA 18:9)

L 29106-66 EWP(m)/EWT(1)/EWT(m)/T   WW/DJ

ABSTRACT: The first half of the article considers two schemes for the flow of jets of finite width past bodies. The fluid is assumed to be ideal. The author devotes his main attention to the two-dimensional case, although he points out the possibility of considering three-dimensional problems as well. In the second half of the article the author uses these schemes, as well as a qualitative calculation of viscosity, to explain the following two phenomena:
1. The stability of a light (ping-pong) ball in a thin vertical jet;
2. The effect first discovered by M. A. Gol'shtik in the case of the flow of a jet past a cylinder in which the width of the jet is commensurable with the dimensions of the body and the horizontal axis of the jet does not pass through the horizontal axis of the cylinder: viz., the acceleration of the bottom part of the cylinder is in a direction opposite to the motion of the jet. Orig. art. has: 5 figures and 1 formula. [JPRS/

SUB CODE: 20/ SUBM DATE: 12oct65 /

Card 1/1

BUCHIN, Ye.D.; LAVRENT'YEV, N.F.

Interrelations between industrial enterprises and the waterways.
Rech.transp. 15 no.12:9-11 D '56.   (MLRA 10:2)
    (Inland water transportation)   (Railroads, Industrial)
            (Conveying machinery)

LAVRENT'YEV, M. F.

STULOV, N.N.; SHAFRANOVSKIY, I.I.; MOKIYEVSKIY, V.A.; POPOV, G.M.; BETEKH-
        TIN, A.G.; NIKOLAYEV, V.A.; ANSHELES, O.M.; GRIGOR'YEV, D.P.;
        YEROFEYEV, B.N.; TATARSKIY, V.B.; SOLOV'YEV, S.P.; NIKITIN, V.D.;
        RUDENKO, S.A.; DUBININA, V.N.; ALYAVDIN, V.F.; VLADIMIROV, B.N.;
        KAZITSYN, Yu.V.; FRANK-KAMENETSKIY, V.A.; KALININ, A.I.; BALA-
        SHOVA, M.N.; SAL'DAU, E.P.; DOLIVO-DOBROVOL'SKAYA, G.M.; LAV-
        RENT'YEV, M.F.

        Viktor Ivanovich Mikheev. Zap. Vses. min. ob-va 86 no.2:317-320
        '57.   (MIRA 10:6)
                        (Mikheev, Viktor Ivanovich, 1912-1956)
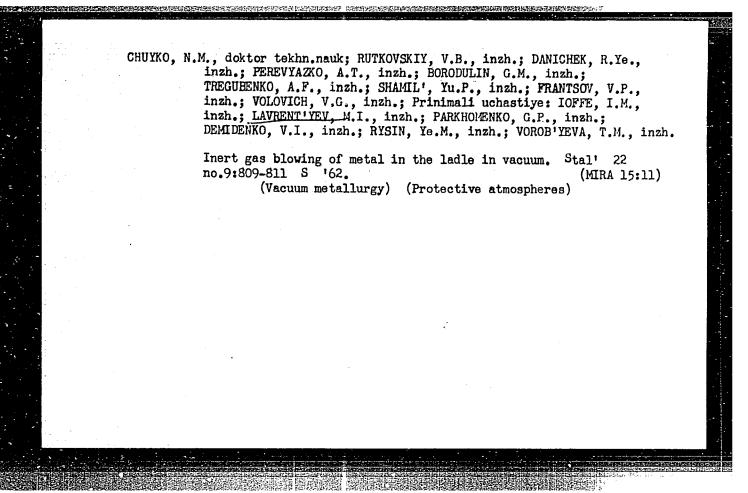
LAVRENT'YEV, M.F.; YEZHOV, N.V., inzh.

Increase lumber transportations by mixed railroad-waterway
communications. Rech.transp. 18 no.12:11-14 D '59.
(MIRA 13:4)

1. Zamestitel' glavnogo dispetchera Volzhskogo ob"yedinennogo
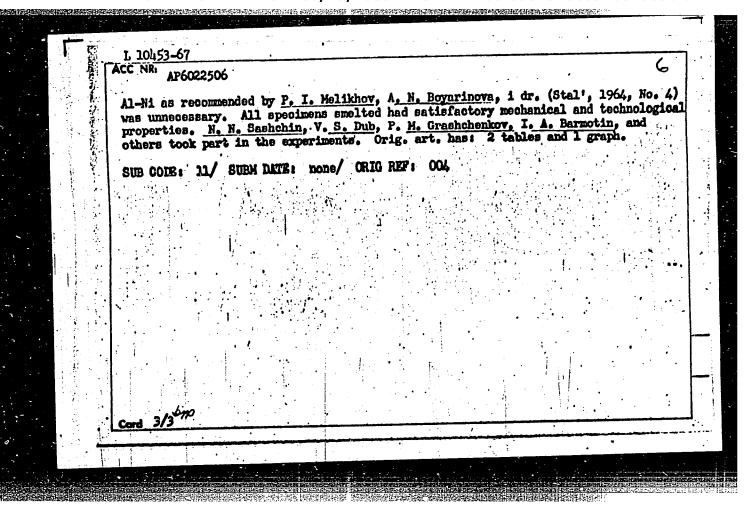rechnogo parokhodstva (for Lavrent'yev).
(Lumber--Transportation) (Inland water transportation)
(Railroads--Freight)

CHUYKO, N.M., doktor tekhn.nauk; RUTKOVSKIY, V.B., inzh.; DANICHEK, R.Ye.,
    inzh.; PEREVYAZKO, A.T., inzh.; BORODULIN, G.M., inzh.;
    TREGUBENKO, A.F., inzh.; SHAMIL', Yu.P., inzh.; FRANTSOV, V.P.,
    inzh.; VOLOVICH, V.G., inzh.; Prinimali uchastiye: IOFFE, I.M.,
    inzh.; LAVRENT'YEV, M.I., inzh.; PARKHOMENKO, G.P., inzh.;
    DEMIDENKO, V.I., inzh.; RYSIN, Ye.M., inzh.; VOROB'YEVA, T.M., inzh.

Inert gas blowing of metal in the ladle in vacuum. Stal' 22
no.9:809-811 S '62.   (MIRA 15:11)
        (Vacuum metallurgy) (Protective atmospheres)

L 10453-67   EWT(m)/EWP(t)/ETI   IJP(o)   JD

ACC NR: AP6022506   SOURCE CODE: UR/0133/66/000/004/0323/0326

AUTHORS: Moshkevich, Ye. I. (Candidate of technical sciences); Gabuyev, G. Kh.; Smolyakov, V. F.; Frantsov, V. P.; Grayfer, Ye. Z.; Spektor, Ya. I.; Lavrent'yev, M. I. (Engineers); Yelinson, G. L. (Engineer)

ORG: none

TITLE: Manufacture of high-alloy steels with normalized phase composition

SOURCE: Stal', no. 4, 1966, 323-326

TOPIC TAGS: alloy steel, chromium steel alloy, high alloy steel / Kh16N9M2 alloy steel, OKh18N10 alloy steel, Kh18N9 alloy steel, O4Kh17N10M2 alloy steel /

ABSTRACT: The possibility of obtaining stainless steels and intermediate type steels having a normalized phase composition (1 - 5% ferrite) under industrial conditions was studied. The experiments were carried out in electrical furnaces of 5—50 tons capacity, on charges consisting of fresh steel and scrap metal respectively. The α-phase content in the steels was maintained by chromium, nickel, and carbon additions. The phase composition was determined after the method of S. A. Iodkovskiy and N. N. Sashchin (Trudy TsNIITMASha No. 13 (Vyplavka stali i proizvodstvo stal'nykh otlivok), ONTI TsNIITMASh, 1960). The experimental results are presented in graphs and tables (see Fig. 1). It was found that alloying with

Card 1/3   UDC: 669.187.2

L 10453-67

ACC NR: AP6022506

6

Al-Ni as recommended by P. I. Melikhov, A. N. Boyarinova, 1 dr. (Stal', 1964, No. 4) was unnecessary. All specimens smelted had satisfactory mechanical and technological properties. N. N. Sashchin, V. S. Dub, P. M. Grashchenkov, I. A. Barmotin, and others took part in the experiments. Orig. art. has: 2 tables and 1 graph.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004

Card 3/3

IAVRENT'YEV, M.L.; KOTEL'NIKOV, I.V.; TARASOV, F.P.; TARASOV, V.P.

Smelting foundry pig iron with low-basicity slags. Metallurg
5 no.9:3-6 S '60.   (MIRA 13:8)

1. Zavod im. Il'icha.
                    (Cast iron—Metallurgy)

STARSHINOV, B.N., kand.tekhn.nauk; SINITSKIY, V.D., inzh.; KOTEL'NIKOV,
    I.V.; LAVRENT'YEV, M.L.

    Slag formation in blast furnaces operating at high pressures.
    Stal' 21 no. 1:12-17 Ja '61.   (MIRA 14:1)

    1. Ukrainskiy institut metallov i zavod im.Il'icha.
         (Blast furnaces)   (Slag)

ONOPRIYENKO, V.P., kand.tekhn.nauk; STARSHINOV, B.N., kand.tekhn.nauk;
SINITSKIY, V.D., inzh.; LAVRENT'YEV, M.L., inzh.; LUKASHIN, N.F.

Distribution and flow of materials in the blast furnace. Trudy
Ukr. nauch.-issl. inst. met. no.7:7-16 '61.   (MIRA 14:11)
(Blast furnaces)

STARSHINOV, B.N.; KOTEL'NIKOV, I.V.; SINITSKIY, V.I.; LAVRENT'YEV, M.L.
    SINITSKIY, V.D.

Blast furnace operation with an addition of natural gas to the blow.
Metallurg 6 no.7:4-8 Jl '61.   (MIRA 14:6)

1. Zavod im. Il'icha i Ukrainskiy institut metallov.
                (Blast furnaces)

LAVRENT'YEV, M.L.; BERDNIK, A.A.

Pulsation of the flame of air-heating burners. Metallurg
6 no.8:6-7 Ag '61.   (MIRA 14:8)

1. Zhdanovskiy zavod im. Il'icha.
        (Air preheaters) (Blast furnaces)

POKHVISNEV, A.N., doktor tekhn.nauk, prof.; TARASOV, V.P., inzh.;
TARASOV, F.P., inzh.; KOTEL'NIKOV, I.V., inzh.; LAVRENT'YEV, M.L.,
inzh.

New charging equipment for blast furnaces. Stal' 22 no.1:16-17
Ja '62.
                                              (MIRA 14:12)

1. Moskovskiy institut stali i Zhdanovskiy zavod imeni Il'icha.
          (Blast furnaces--Equipment and supplies)

STARSHINOV, B.N., knad.tekhn.nauk; SINITSKIY, V.D., inzh.; LAVRENT'YEV,
M.L., inzh.; KOTEL'NIKOV, I.V., inzh.

Processes of deexidation and slag formation in blast furnaces
operating on natural gas. Stal' 22 no.10:871-876 O'62. (MIRA 15:10)
(Blast furnaces)

LAVRENT'YEV, M.L.; POPOV, A.P.; FOMIN, V.B.; LUKASHIN, N.F.; YEFREMENKO, O.K.

Highly efficient method of iron desulfuration outside a blast
furnace. Met. i gornorud. prom. no.4:10-11 Jl-Ag '64.

(MIRA 18:7)

STARSHINOV, B.N.; SINITSKIY, V.D.; LAVRENT'YEV, M.L.

Materials and gas distribution in, and the operation of blast furnaces. Sbor, trud. UNIIM no.9:31-55 '64   (MIRA 18:1)

STARSHINOV, B.N.; KOTEL'NIKOV, I.V.; LAVRENT'YEV, M.L.; SINITSKIY, V.D.;
SINITSKIY, V.I.

Making pig iron with a combined blow. Sbor. trud. UNIIM no.9:
56-70 '64   (MIRA 18:1)

STARSHINOV, B.N.; SINITSKI, V.D.; SEN'KO, G,Ye.; GULYGA, D.V.; BABIY, A.A.;
    KHORUZHIY, A.G.; Prinimali uchastiye: OSTROUKHOV, M.Ya.; SAVELOV,
    N.I.; PLISKANOVSKIY, S.T.; MOISEYEV, Yu.G.; LAVRENT'YEV, M.L.;
    TARASOV, F.P.; ZAGREBA, A.V.; KAMENEV, R.D.; TKACHENKO, A.A.;
    FREYDIN, L.M.; LUKIN, P.G.; POPOV, Yu.A.; MISHIN, P.P.; KARACHENTSEV,
    M.D.; DOLMATOV, V.A.; AYUKOV, A.S.; PALAGUTA, V.P.; VYAZOVSKIY, Yu.V.;
    SOLODKIY, Yu.A.; KONAREVA, N.V.; SAPRONOV, Yu.V.; SINITSKAYA, S.K.;
    SAPRONOV, B.V.; LEKAREV, V.L.; STOLYAR, V.V.; PROKHORENKO, Z.A.;
    BANDINA, Ye.Ye.

Results of the first year of operation of large capacity blast
furnaces. Sbor. trud. UNIIM no.11:34-46 '65.

                                                (MIRA 18:11)

STARSHINOV, B.N.; SINITSKIY, V.D.; LAVRENT'YEV, M.L.; KHORUZHIY, A.G.;
    TARASOV, F.P.; VYAZOVSKIY, Iu.V.

Investigating processes in the hearth of a 1719 m³ capacity
blast furnace. Sbor.trud. UNIIM no.11:48-55 '65.

                                          (MIRA 18:11)

LAVRENT'YEV, M.L.; FOMIN, V.B.; POPOV, A.P.; SINITSKIY, V.D.; YEFREMENKO, O.K.; LUKASHIN, N.F.

Desulfurizing cast iron with lime in special equipment. Sbor. trud. UNIIM no.12:80-89 '65.

(MIRA 18:11)

LAVRENT'YEV, M. M.

USSR/Mathematics - Approximation accuracy

FD-452

Card 1/1   :   Pub. 64 - 4/11

Author   :   Lavrent'yev, M. M. (Moscow)

Title   :   Accuracy of solution of systems of linear equations

Periodical   :   Mat. sbor., 34 (76), 259-268, Mar/Apr 1954

Abstract   :   Demonstrates relations between the absolute value of the vector error Δ r and the average error of the coefficients in the linear vector system ax = b, where r is the solution vector. Presents a method for increasing the accuracy of solution of ax = b when a and b are known approximately and if the solution of the system is known to be smooth (that is, the inequality $|x_i - x_{it1}| \leqslant k/n$ holds).

Institution :

Submitted   :   February 24, 1953

LAVRENT'YEV, M.M.

Lavrent'ev, M. M. On an estimate of the accuracy of a solution of a system of linear equations. Doklady Akad. Nauk SSSR (N.S.) 95, 447–448 (1954). (Russian)

The error of the solution of a linear system, bounded in the maximum-modulus metric in an earlier article [see the preceding review], is now bounded in the euclidean metric. Assume $\sum_{j=1}^{n} a_{ij}x_j = z_i$, with $\Delta = |\det (a_{ij})|$. Assume either (*) $\sum_{i=1}^{n} a^2_{ij} = 1$, or (**) $\sum_{j=1}^{n} a^2_{ij} = 1$. It is proved that $(\sum_i x_i^2)^{\frac{1}{2}} \leq \Delta^{-1} e^{\frac{1}{2}} (\sum_i z_i^2)^{\frac{1}{2}}$. With hypothesis (**) the estimate cannot be essentially improved, but with (*) the factor $e^{\frac{1}{2}}$ can be dropped. The known representation $A = HU$ (H self-adjoint and U unitary) is used to reduce the proof to the case of self-adjoint A. The estimate then follows after the author has proved that $\Delta > \lambda e^{-\frac{1}{2}}$, where λ is the least eigenvalue of A.
                              G. E. Forsythe (Los Angeles, Calif.).

LAVRENTYEV, M.M.

Lavrent'ev, M. M. On Cauchy's problem for Laplace's equation. Dokl. Akad. Nauk SSSR (N.S.) 102 (1955), 205–206. (Russian)

Let the function $u(x, y)$ be harmonic in the strip $0 \leq y \leq 1$ and satisfy the following condition: $u(x, 0) = 0$; $u(x + 2k\pi, y) = u(x, y)$; $u(-x, y) = u(x, y)$; $u(k\pi, y) = 0$; $|u(x, y)| < M$; and $\partial u(x, 0)/\partial y = \varphi(x)$. Further, let the sequence of functions $w_n(x, y)$, defined in the same strip, satisfy the first four of the foregoing conditions and also $\partial w_n(x, 0)/\partial y = \varphi_n(x)$, where $\varphi_n(x)$ converge uniformly to $\varphi(x)$ as $n \to \infty$. It is shown that if $w_n(x, y)$ satisfies the partial differential equation

$$-\varepsilon_n \frac{\partial^{2m} w_n}{\partial x^{2m}} = \frac{\partial^2 w_n}{\partial x^2} + \frac{\partial^2 w_n}{\partial y^2},$$

then, for some values of the ε_n, the sequence of functions $w_n(x, y)$ must converge to the harmonic function $u(x, y)$. An analogous reasoning shows that if the ε_n all vanish, that is, if the $w_n(x, y)$ are harmonic, then the sequence converges to $u(x, y)$ provided that we omit the hypothesis that the functions vanish on the x axis.

E. F. Beckenbach (Los Angeles, Calif.).

LAVRENTYEV, M.M.

A function which is harmonic in a bounded domain is determined from its
values and the values of its derivative with respect to the normal on a
piece of the boundary of the domain. At first the plane problem is con-
sidered, the author brings results of Carleman which relate to this problem
and he proposes an effective method of solution basing on Carleman's formula.
Then the stability of the plane problem is proved in an other metric and a
method for the approximative solution of the problem is given. In the second
chapter of the paper the spatial problem is considered. The author gives
estimates which characterize the stability of the problem in the class of
bounded solutions. An effective method of solution is proposed here too
which also can be used in the plane case.

LAVRENT'YEV, M.M.

SUBJECT   USSR/MATHEMATICS/Differential equations   CARD 1/2   PG - 403
AUTHOR   LAVRENT'EV M.M.
TITLE   On a boundary value problem for a hyperbolic system.
PERIODICAL   Mat. Sbornik, n. Ser. 38, 451-464 (1956)
               reviewed 11/1956

The integration of the equations of the vortex-free stationary gas flow in
a strip of planes being bounded by the x-axis and the line y = y(x) leads
to the problem (P) of the solution of the functional equation

$$f(u) = \varphi\left\{ \int_0^u \cos f(t) \cos\left[f(t) + 2 \sum_{k=}^{\infty} f(t-2k) + \delta \right] dt + o \right\}$$

for the function f. For the known function φ (angle of inclination of the
line y = y(x)) it is assumed

a) $|\varphi(x)| < \pi/2$;   b) $\varphi(x)(4+\varepsilon)^{-x} \xrightarrow[x \to -\infty]{} 0$;   c) φ satisfies a Lipschitz

condition on the whole x-axis.
By the method of successive approximations the unique solution of the problem
(P) is shown. If f(u) shall describe the flow then it must still satisfy the
inequation

LAVRENT'YEV, M.M.

SUBJECT   USSR/MATHEMATICS/Integral equations   CARD 1/2   PG - 200
AUTHOR   LAVRENT'EV M.M.
TITLE   On the question of the inversion problem in the potential theory.
PERIODICAL   Doklady Akad. Nauk 106, 389-390 (1956)
              reviewed 8/1956

The form and magnitude of a body of known density shall be determined if on a
piece of closed surface around the body the potential generated by the body
and its derivative with respect to the normal are known. The author formulates
the following theorem which relates to the stability of the wanted solution:
Let $\varphi(x,y)$ be a two times continuously differentiable function, it shall be
defined and positive in a finite simply connected region S of the (x,y)-plane
and shall equal zero on the boundary of S. Let D be the domain bounded by the
surfaces $z = -\varphi(x,y)$ and $z = (h-1)\varphi(x,y)$. If the harmonic function $u(x,y,z)$
satisfies the conditions

$$\iint\limits_{S} \text{grad}^2 u\left[x,y,-\varphi(x,y)\right] dx\, dy < m^2$$

$$\iint\limits_{S} \text{grad}^2 u\left[x,y,(h-1)\varphi(x,y)\right] dx\, dy < M^2,$$

then also

Moscow State U.

Doklady Akad. Nauk <u>106,</u> 389-390 (1956)   CARD 2/2   PG - 200

$$\iint\limits_{S} grad^2 u\left[x,y,z\,\varphi(x,y)\right]dx\,dy < cM^{\frac{z+1}{h}}\,m^{2\cdot\frac{h-z}{h}}$$

is valid, where $-1 < z < h-1$, c a constant independent of n. The proof shall result from the estimation of the logarithmic derivative of the last integral.

LAVRENT'YEV, M.M. *LAVRENTYEV, M.M.*

SUBJECT   USSR/MATHEMATICS/Theory of Functions   CARD 1/2   PG - 642
AUTHOR   LAVRENT'EV M.M.
TITLE   Quantitative precision of the inner theorems of uniqueness.
PERIODICAL   Doklady Akad.Nauk 110, 731-734 (1956)
             reviewed 3/1957

Let $f(z)$ be analytic in the unit circle D. Let A be a point set which converges
to an inner point of D. Let $|f(z)| \leqslant 1$ everywhere in D and $|f(z)| \leqslant \varepsilon$ on the
set A. D is mapped conformally onto itself such that a part of A goes over
into the sequence of numbers $a_1, \ldots, a_n, \ldots$ which converges to a number a,
where $|a_k| \leqslant |a_{k+1}|$ $(k=1, \ldots, \infty)$. Then in a point z_0 we have:

$$|f(z_0)| \leqslant \left[\frac{|z_0| + |a|}{1 + |z_0| \cdot |a|} \right]^{\frac{n}{2}} .$$

Let a function u(z), being harmonic in D, satisfy the inequations

$$|u(z)| \leqslant 1 \quad \text{everywhere in D}$$

$$|u(z)| \leqslant \varepsilon \quad \text{for } |z| = r, \quad \arg z \leqslant \alpha, \quad \arg z \geqslant 2\pi - \alpha .$$

Then $|u(e^{\ln r + i\gamma})| \leqslant q(r) \, \varepsilon^{\gamma(r)\alpha} ,$

Doklady Akad.Nauk <u>110,</u> 731-734 (1956)   CARD 2/2   PG - 642

where $q(r)$ and $\chi(r)$ are certain functions of the radius r. Herefrom the estimation for $u(z)$ in an arbitrary point of D can be obtained by aid of the theorem of Hadarmard on three circles.

LAVRENT'YEV, M. M. Cand Phys-Math Sci -- (diss) "On Cauchy's problem for elliptical equations." Mos, 1957. 5 pp 20 cm. (Acad Sci USSR. Math Inst im V. A. Steklov), 200 copies (KL, 24-57, 115)

-6-

LAVRENTYEV, (1)(1).

SUBJECT   USSR/MATHEMATICS/Differential equations   CARD1/3   PG - 722

AUTHOR   LAVRENTJEV M.M.

TITLE   On the Cauchy problem for linear elliptic equations of second order.

PERIODICAL   Doklady Akad.Nauk 112, 195-197 (1957)
             reviewed 4/1957

Theorem: Let the function $u(x,t) \equiv u(x_1, x_2, \ldots, x_n, t)$ satisfy the equation

(1)
$$\frac{\partial^2 u}{\partial t^2} + \sum_{i,j=1}^{n} a_{ij} \frac{\partial^2 u}{\partial x_i \, x_j} + \sum_{i=1}^{n} b_i \frac{\partial u}{\partial x_i} + cu = 0$$

in $x \in \Omega$, $0 \leqslant t \leqslant 1$, and vanish for $t = 0$ and on the boundary of Ω for every t (Ω is a simply connected fonote domain with smooth boundary). Let the coefficients of (1) satisfy the following conditions:

a) there exist $\dfrac{\partial a_{ij}}{\partial x_i}$, $\dfrac{\partial^2 a_{ij}}{\partial x_i \partial x_j}$, $\dfrac{\partial^2 a_{ij}}{\partial t^2}$ and they are summable with the

square for every t in Ω such that